ACOUSTICAL ANALYSIS ASSOCIATES, INCORPORATED

AAAI Report 1353
AAAI Project 88018

QUARTERLY NOISE MONITORING AT BOB HOPE AIRPORT FOURTH QUARTER 2009

FEBRUARY 2010

Prepared for:

BURBANK GLENDALE PASADENA AIRPORT

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Prepared for:

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FOURTH QUARTER 2009

I. INTRODUCTION

In compliance with the California Noise Standards (Reference 1) and the current variance from certain provisions of the Standards (Reference 2), the operator of the Bob Hope Airport is required to perform noise monitoring in the vicinity of the airport for the purpose of establishing a noise impact boundary. The Noise Standards currently specify a community noise equivalent level (CNEL) of 65 dB for the noise impact boundary[1]. The airport is required to provide, each quarter, an updated annual noise impact contour based on measurement data over the four preceding quarters.

A permanent noise monitoring system became operational in April 1980 and, with brief interruption for system expansion, maintenance, and program changes, has been operational since that time. Of the original nine noise monitor sites, eight have remained unchanged since 1980. The monitor at site 8 was removed in 1997 and replaced by a monitor at site 18. Two sites were added east of the airport in late 1980. Four sites were added south of the airport in January 1986 in response to the requirement to determine the 65 dB contour. Three more locations were added in February 1997. Two of these, identified as 16 and 17, are south of the airport, and one, 18, is to the west. The site to the west replaces Site 8. These locations were added to permit monitoring closer to the 65 dB contour. The noise monitoring computer at the airport was replaced in August 1995.

This report describes the data acquired by the monitoring system during the fourth quarter of 2009. Noise impact boundaries for 65 dB and 70 dB are shown based on these measurements and measurements obtained during the first, second, and third quarter 2009 reported in References 3, 4 and 5. Figure 1 shows the 70 dB contour and Figure 2 shows the 65 dB contour, based on the measured noise data.

1 Prior to January 1, 1986, a CNEL of 70 dB defined the noise impact boundary.

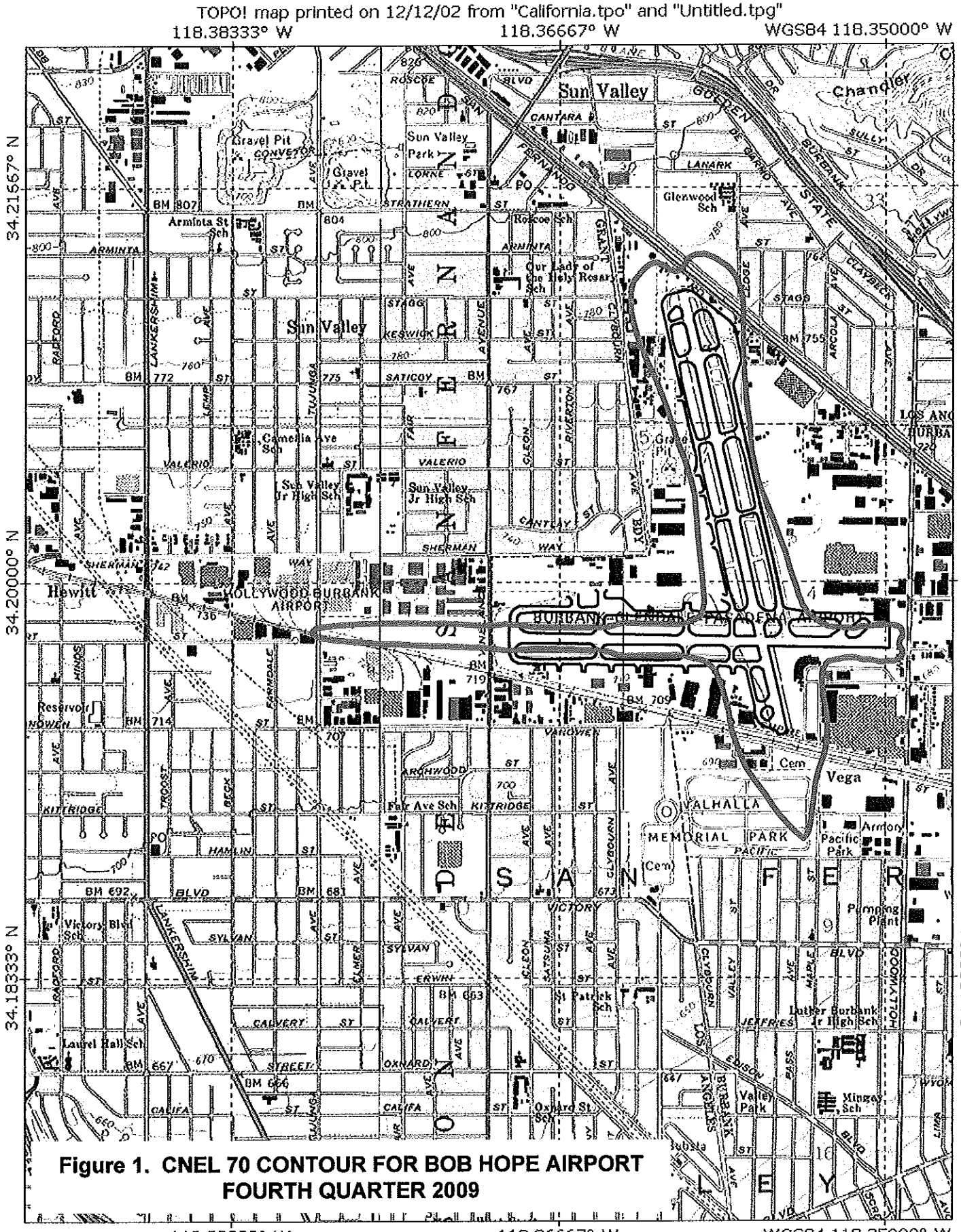

Figure 1. CNEL 70 CONTOUR FOR BOB HOPE AIRPORT FOURTH QUARTER 2009

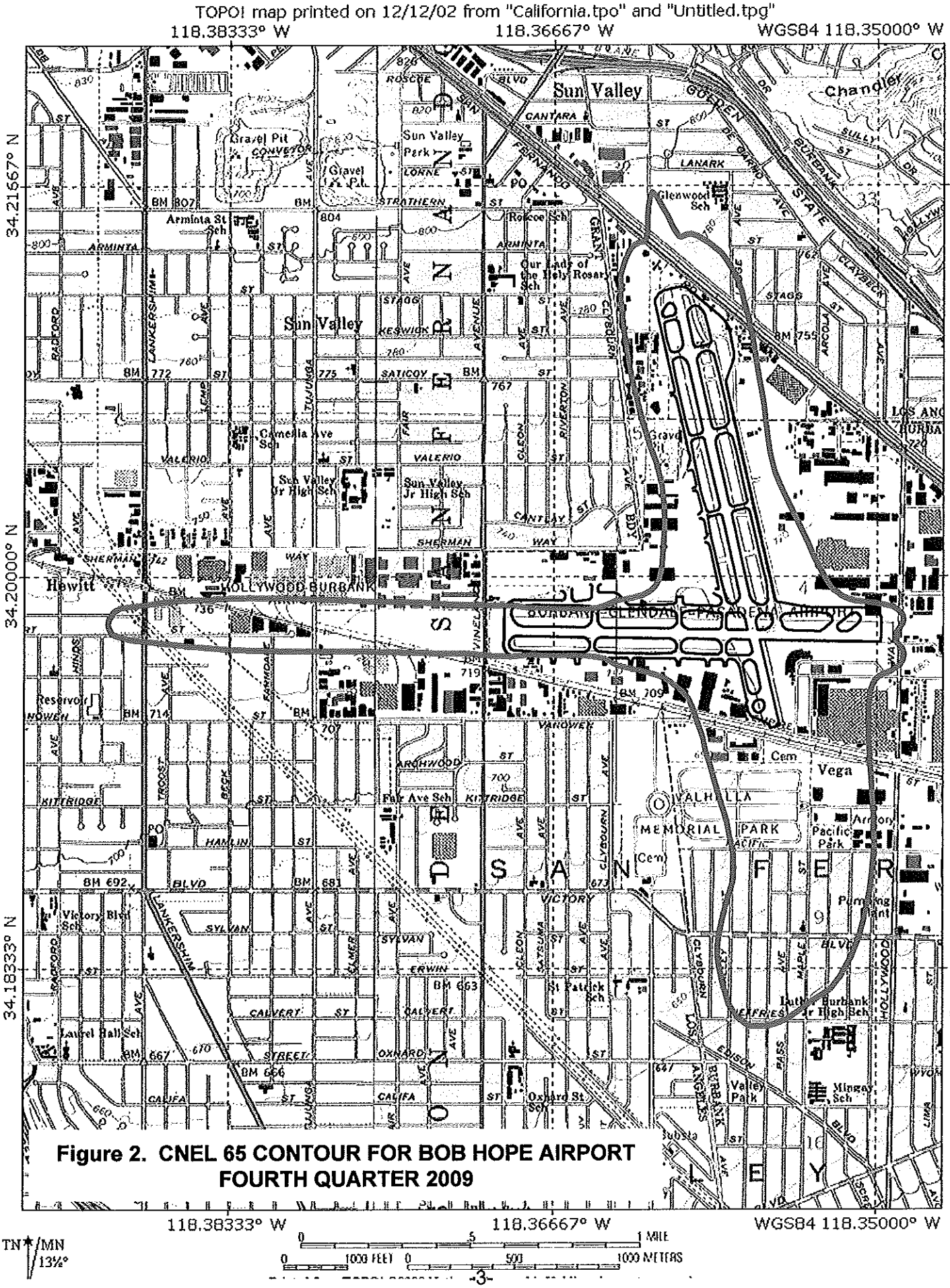

Figure 2. CNEL 65 CONTOUR FOR BOB HOPE AIRPORT FOURTH QUARTER 2009

II. NOISE MEASUREMENTS

A. Sites

Aircraft noise levels were monitored at 15 locations prior to February, 1997. Two sites were added in February 1997, and equipment at one site west of the airport was moved to a new location. In July 2003, the monitor station at site 9 was moved 105 feet further west to accommodate new construction at the Fire Station. The noise monitor sites are shown in Figure 3.

B. Noise Measurement Equipment

Each of the microphone locations uses an identical set of equipment connected to a central control unit. The noise level at each site is digitized and transmitted by phone line to the central site. The computer at the central site processes the data to produce (among other measures) the CNEL at each site. Appendix A provides a brief description of the system.

C. Noise Data

During this quarter, there was very little telephone signal interruption, and there was no significant loss of noise data. Tables 1, 2, and 3 show the aircraft CNEL measured at each monitoring site for each day of the quarter.

Figure 3. NOISE MONITOR LOCATIONS

D. Operational Data

Departure and arrival schedules are provided by the airlines. In addition, airline flight operations are tabulated and provided by airport personnel. Operations of certain general aviation aircraft are determined from the airport's computerized flight tracking system.

III. MEASURED NOISE DATA

Daily CNEL values for the noise monitoring system are listed in Tables 1, 2, and 3. Table 4 lists the average values for each quarter together with the annual average.

IV. SCHEDULED AIRLINE AND AIR TAXI OPERATIONS

The scheduled air carrier and commuter operations for the quarter are shown in Table 5.

V. CNEL CONTOUR DEVELOPMENT

The contours shown in Figures 1 and 2 are based upon computer-generated "master" contours which are adjusted to reflect the monitoring data. Beginning with the second quarter 2009, noise contours are developed using the master contours produced by Version 7.0 of the Integrated Noise Model (INM), a sophisticated aircraft noise modeling program developed for the Federal Aviation Administration. Inputs to the program consist of aircraft types and performance data, flight paths, numbers of operations, and day/evening/night distribution of flights. The program calculates CNEL values at equally spaced grid points and produces CNEL contour lines at 1 dB intervals. The annual average CNEL values at each site were marked at the appropriate locations on the contour map and the locations of the 65 and 70 dB CNEL contours were determined in the vicinity of each measuring point. These points were then joined following the general shape of the computed contours.

The master contours, used in developing the contours for this quarter are based on operations for the 12-month period from July 2008 through June 2009. This replaced the previous master set of CNEL Contours which were based on operations for the 12-month period from January 2007 through December 2007.

TABLE 1. CNEL VALUES FOR OCTOBER 2009

RMS NUMBER

Date	1	2	3	4	5	6	7	9	10	11	12	13	14	15	16	17	18
10/01/09	59.4	58.8	60.3	58.8	56.9	56.5	56.4	60.9	49.3	54.4	47.8	55.6	56.4	58.8	61.3	58.7	61.9
10/02/09	59.3	57.1	58.0	53.3	56.5	55.8	57.2	57.3	43.3	50.7	47.3	57.4	52.5	57.2	59.2	57.4	57.5
10/03/09	59.2	56.5	58.1	53.9	53.4	54.1	56.3	56.6	53.2	45.8	46.8	58.2	53.2	58.2	58.0	57.9	57.0
10/04/09	63.6	61.2	61.5	59.5	60.2	56.9	58.2	61.6	54.5	45.5	52.7	61.1	57.7	61.9	62.9	62.1	61.8
10/05/09	63.6	61.1	62.2	54.1	57.9	59.9	56.9	62.5	51.5	48.6	54.0	61.8	58.0	62.9	62.8	62.6	63.1
10/06/09	64.0	62.2	63.5	60.6	59.1	59.5	59.2	63.1	48.3	53.9	55.0	62.2	59.7	62.7	65.1	62.1	63.8
10/07/09	63.7	61.2	61.9	55.4	55.1	60.3	62.9	63.4	54.0	51.6	54.2	61.4	57.7	62.4	62.7	61.9	64.0
10/08/09	63.2	61.8	63.1	55.8	58.6	57.3	58.1	63.9	50.4	49.8	52.3	61.1	59.3	62.4	64.0	62.6	64.0
10/09/09	63.4	61.0	62.6	54.5	56.8	61.2	56.6	63.6	49.0	55.6	52.8	61.9	58.0	62.6	63.3	62.9	64.2
10/10/09	59.7	56.8	57.7	65.5	59.1	50.5	53.4	60.2	53.5	49.2	48.2	57.2	52.8	58.2	59.0	58.4	60.6
10/11/09	62.8	60.5	61.3	53.4	56.5	53.5	53.0	62.1	51.0	48.7	50.2	60.9	58.0	61.5	62.1	61.5	62.4
10/12/09	63.9	60.9	61.8	58.6	57.8	47.4	50.9	62.7	53.0	52.8	54.6	62.4	57.9	62.9	62.6	63.0	63.4
10/13/09	65.7	61.1	60.5	61.7	58.0	55.7	59.4	65.1	54.3	51.8	56.9	63.1	57.0	62.4	61.7	62.6	65.7
10/14/09	64.8	60.9	61.9	61.1	59.4	52.5	51.8	66.8	51.3	50.8	56.4	62.7	58.0	63.1	63.0	63.3	65.9
10/15/09	63.2	61.9	64.0	57.8	54.9	54.4	55.6	63.1	61.1	49.6	52.2	59.7	60.3	62.0	64.8	62.7	63.0
10/16/09	61.8	60.4	62.4	64.4	66.7	57.7	62.5	63.4	54.1	54.5	49.1	58.7	57.7	61.2	63.2	60.9	63.4
10/17/09	58.9	57.1	57.6	54.9	56.9	47.7	58.2	57.9	53.1	53.3	43.0	56.0	54.1	57.8	59.5	57.3	58.5
10/18/09	62.2	59.3	60.7	57.9	56.2	50.5	60.2	62.3	53.0	46.1	50.3	60.3	55.9	61.6	62.1	61.1	62.3
10/19/09	63.0	61.1	62.8	58.1	56.1	54.4	54.3	62.0	52.6	50.9	50.6	61.9	58.1	63.2	62.9	62.7	62.5
10/20/09	61.5	59.3	61.7	60.4	58.7	59.7	61.1	61.1	53.7	51.2	52.3	60.0	57.3	61.2	62.5	60.5	63.1
10/21/09	62.7	60.9	62.1	57.9	58.4	54.1	60.8	61.9	56.4	54.6	51.3	60.2	57.9	61.1	63.2	60.4	62.3
10/22/09	63.0	61.6	63.3	58.3	57.1	53.4	57.2	62.8	56.9	51.8	52.6	60.5	59.3	62.6	63.8	61.7	63.3
10/23/09	57.9	57.9	59.4	50.7	55.7	52.9	58.9	59.7	54.3	51.0	50.7	54.5	55.2	57.3	60.4	56.8	60.9
10/24/09	59.9	56.8	58.3	55.3	54.9	49.9	57.7	59.1	46.8	47.9	47.2	57.7	53.1	58.9	58.8	58.4	59.4
10/25/09	61.1	58.7	60.4	56.3	58.8	56.6	69.8	60.7	53.6	46.0	50.9	59.0	56.8	61.1	61.3	60.8	61.7
10/26/09	60.4	59.6	60.9	59.7	60.4	54.3	55.8	59.3	59.2	49.9	48.1	57.8	57.4	60.2	62.0	59.3	61.3
10/27/09	60.6	59.8	61.7	65.8	64.5	64.9	64.3	58.9	50.5	51.8	54.9	58.3	58.2	60.9	65.6	59.8	59.4
10/28/09	57.7	56.4	57.4	60.7	62.5	63.5	60.9	57.5	54.2	53.7	47.5	47.2	56.7	52.1	63.8	49.2	60.2
10/29/09	62.7	60.7	61.9	55.4	56.8	58.4	61.2	61.3	51.0	49.8	52.8	60.7	58.5	61.0	62.8	60.3	62.4
10/30/09	62.9	60.7	62.4	54.8	56.9	55.6	58.0	61.5	52.3	53.7	53.4	60.7	58.3	61.6	62.9	60.9	62.0
10/31/09	58.0	55.2	57.5	57.9	55.3	50.2	57.2	57.7	49.8	47.6	50.2	56.3	52.5	57.7	58.5	56.9	60.0
AVERAGE	62.2	60.0	61.3	59.4	59.1	57.5	60.2	61.9	53.9	51.5	52.2	60.0	57.3	61.1	62.5	60.9	62.4
NO. DAYS	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31

TABLE 2. CNEL VALUES FOR NOVEMBER 2009

RMS NUMBER

Date	1	2	3	4	5	6	7	9	10	11	12	13	14	15	16	17	18
11/01/09	59.6	58.5	59.9	56.1	56.7	52.5	55.0	59.8	53.4	56.9	48.9	57.4	55.3	59.8	60.9	59.4	60.7
11/02/09	61.5	59.6	61.1	57.4	57.8	53.7	56.0	60.1	59.4	55.5	50.7	59.1	56.2	61.0	68.0	60.3	60.6
11/03/09	62.0	59.4	60.6	56.1	57.6	56.5	57.6	61.2	50.6	49.8	53.4	60.3	55.9	60.5	61.5	60.0	62.4
11/04/09	63.9	61.2	61.9	62.4	61.0	56.3	57.7	62.3	53.4	51.8	56.0	62.9	58.2	63.7	62.7	63.3	63.1
11/05/09	63.6	61.6	62.8	54.7	57.4	56.7	56.3	63.7	53.3	46.8	53.2	61.3	58.8	62.6	63.4	61.7	63.8
11/06/09	63.1	61.0	60.2	55.9	56.5	57.3	55.7	63.5	52.2	52.9	52.7	61.8	57.6	62.8	62.6	62.5	64.0
11/07/09	60.7	57.8	56.5	57.8	59.4	60.7	62.0	59.5	49.5	46.9	48.4	59.2	55.6	60.2	60.0	59.7	59.9
11/08/09	62.5	60.3	61.6	57.7	59.9	50.8	55.3	61.4	49.2	47.2	52.0	60.4	57.6	62.8	63.1	62.3	61.7
11/09/09	62.7	60.2	61.2	58.0	58.3	54.7	58.5	60.8	66.3	51.6	54.2	61.1	56.8	61.4	62.2	60.9	61.7
11/10/09	62.1	60.1	61.4	57.7	57.8	54.9	59.7	61.3	53.5	52.9	53.6	61.3	56.1	62.3	61.5	61.5	61.9
11/11/09	59.8	57.1	57.0	50.4	54.1	49.5	55.4	58.8	56.0	55.2	49.7	57.6	54.2	58.8	58.5	58.4	59.3
11/12/09	63.6	61.1	60.9	55.9	57.9	55.2	56.0	63.0	50.9	47.1	55.6	62.1	57.2	62.3	62.3	61.7	63.2
11/13/09	63.2	60.8	61.8	57.3	59.8	62.5	61.1	61.7	54.4	58.8	53.4	61.3	57.6	62.0	62.9	62.1	62.5
11/14/09	58.9	58.9	56.8	55.1	57.4	50.5	52.9	55.8	54.4	48.5	48.3	57.9	53.4	58.1	58.2	58.2	57.2
11/15/09	61.6	61.9	59.3	54.7	55.4	51.2	54.7	60.3	46.8	49.8	52.2	60.1	55.2	60.7	60.7	60.2	61.2
11/16/09	60.2	59.5	58.8	58.4	58.4	59.7	57.1	59.4	54.2	53.6	56.2	56.7	55.3	58.6	60.9	57.5	60.3
11/17/09	61.6	59.7	60.4	59.9	56.7	56.2	58.4	60.4	50.5	51.3	52.2	59.2	57.1	60.6	62.0	60.0	62.9
11/18/09	61.1	59.0	59.3	61.5	61.7	61.7	61.9	61.1	51.8	56.2	53.0	59.4	56.4	60.9	62.4	60.0	62.9
11/19/09	66.1	60.5	60.8	60.1	61.2	58.5	58.9	61.6	60.5	52.2	54.4	61.8	57.4	61.8	62.7	61.0	62.0
11/20/09	62.8	61.4	61.7	57.4	58.9	53.4	56.9	63.3	55.7	52.8	54.0	61.3	58.0	63.2	62.8	62.2	64.2
11/21/09	60.7	58.5	58.6	54.2	56.6	53.0	56.5	60.3	57.9	51.4	52.3	58.9	54.8	60.0	59.9	59.6	61.9
11/22/09	62.8	59.6	60.6	59.5	59.8	53.1	59.6	61.1	50.8	53.2	51.8	61.0	57.9	62.1	61.9	61.4	61.7
11/23/09	62.2	60.9	60.9	56.6	55.2	53.0	54.6	59.7	54.5	51.7	52.7	61.3	57.4	61.8	62.2	61.3	61.2
11/24/09	60.4	60.6	60.5	61.2	59.8	54.1	56.0	60.8	48.1	51.1	50.9	59.5	56.4	65.6	61.3	59.5	61.9
11/25/09	60.5	59.2	59.9	61.7	63.1	55.9	56.6	60.5	52.5	55.4	48.0	58.9	57.3	60.4	61.0	59.6	61.6
11/26/09	54.2	54.2	55.5	53.0	59.1	45.2	51.8	53.1	48.8	45.9	42.9	52.7	50.9	55.5	56.4	55.0	54.7
11/27/09	61.3	58.4	58.1	57.4	55.8	51.6	53.6	61.4	47.3	52.3	51.7	59.8	54.8	60.3	59.7	59.9	61.8
11/28/09	54.2	55.3	58.5	57.0	59.4	60.7	59.7	54.6	47.6	45.6	50.1	51.1	56.2	53.3	64.2	52.2	58.9
11/29/09	59.5	57.1	59.4	58.9	59.6	60.4	53.3	59.8	46.1	45.4	47.4	57.1	54.8	59.7	61.1	58.9	60.7
11/30/09	55.7	53.1	54.7	58.0	56.2	59.6	57.7	51.9	41.2	48.2	43.9	50.6	50.5	53.5	58.2	53.1	55.0
AVERAGE	61.7	59.6	60.1	58.1	58.8	57.0	57.6	60.7	55.7	52.7	52.4	59.8	56.4	61.2	62.1	60.3	61.6
NO. DAYS	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30

TABLE 3. CNEL VALUES FOR DECEMBER 2009

RMS NUMBER

Date	1	2	3	4	5	6	7	9	10	11	12	13	14	15	16	17	18
12/01/09	64.1	60.8	61.1	56.5	56.4	55.6	55.3	62.3	52.0	55.9	56.2	62.5	57.1	62.8	61.9	62.0	62.8
12/02/09	64.0	60.9	61.7	56.2	57.0	57.5	60.3	62.9	54.1	50.6	55.4	61.9	58.0	62.0	62.7	61.2	63.6
12/03/09	61.0	58.7	59.7	54.8	56.8	53.1	53.4	59.5	52.5	47.4	51.7	60.8	55.7	61.5	60.7	60.8	60.5
12/04/09	60.8	59.8	60.7	55.9	58.1	56.0	62.9	61.1	54.6	55.4	52.6	59.8	56.9	61.4	61.5	61.1	62.1
12/05/09	60.3	58.1	56.7	55.3	56.1	51.3	52.7	59.6	48.7	39.5	51.6	58.8	53.7	59.4	58.3	58.3	59.8
12/06/09	64.5	60.7	60.5	57.5	60.7	45.9	46.3	61.2	51.6	50.1	54.3	63.8	57.5	63.1	61.8	62.5	61.9
12/07/09	61.4	59.1	59.8	62.0	61.6	60.9	57.4	59.8	49.5	50.2	54.4	59.7	58.3	60.4	64.7	59.6	62.5
12/08/09	62.5	59.6	59.8	56.9	57.4	57.0	54.5	62.0	58.7	50.8	54.1	60.5	56.9	61.2	61.5	60.2	63.6
12/09/09	63.2	61.1	62.0	51.8	58.3	52.7	62.8	63.0	57.3	56.8	57.0	61.6	59.7	62.6	63.6	61.9	63.9
12/10/09	63.0	60.5	60.6	56.5	57.3	53.5	56.7	63.8	52.4	48.8	54.4	62.6	57.2	62.4	62.2	61.7	63.8
12/11/09	63.8	61.2	60.7	56.5	55.5	54.3	51.5	64.4	50.0	42.6	54.6	61.9	57.8	62.2	62.6	61.5	64.6
12/12/09	62.9	57.9	58.1	58.7	55.6	45.3	46.9	61.1	45.1	52.6	53.6	60.3	55.3	59.8	60.0	59.3	62.1
12/13/09	62.2	59.8	60.4	53.0	59.0	53.6	58.8	61.2	54.6	46.4	52.4	60.5	57.1	61.7	61.9	61.2	62.2
12/14/09	63.0	60.6	61.0	57.2	59.7	55.3	57.3	61.7	52.3	48.8	57.1	62.0	57.8	62.7	62.5	62.0	62.4
12/15/09	62.0	60.4	60.8	57.2	55.1	55.2	56.8	62.3	58.3	53.0	56.6	60.9	58.2	61.7	62.1	60.9	63.3
12/16/09	62.3	61.6	62.0	61.0	61.8	55.5	55.4	62.4	53.2	55.5	54.9	59.3	58.9	62.0	63.5	61.0	63.5
12/17/09	62.1	61.0	61.9	61.5	59.6	52.5	57.2	61.8	62.4	53.9	52.8	59.8	58.2	62.3	63.0	61.7	62.6
12/18/09	62.1	60.4	61.5	59.0	66.5	54.3	56.8	62.9	53.0	57.7	51.7	60.4	57.4	61.6	63.0	61.1	63.9
12/19/09	59.6	57.7	59.4	62.9	62.2	54.4	56.5	58.9	51.3	45.9	48.8	57.3	54.7	58.7	60.4	57.8	60.2
12/20/09	62.1	60.9	62.0	59.1	61.6	51.5	56.1	60.8	49.4	52.0	51.1	59.8	58.4	61.3	63.2	60.6	62.1
12/21/09	63.0	61.0	61.1	58.1	58.9	54.7	54.6	62.1	49.5	51.9	53.1	61.7	57.9	63.0	62.7	64.6	63.2
12/22/09	56.0	52.2	56.8	65.2	66.2	67.5	64.6	58.0	48.2	53.3	52.5	46.3	56.0	50.9	65.3	43.6	60.3
12/23/09	63.5	60.2	60.9	61.0	62.2	55.0	55.3	61.9	60.3	55.2	51.5	60.9	57.4	61.2	62.1	60.4	62.5
12/24/09	57.1	56.4	56.2	54.0	51.1	53.6	53.1	58.6	50.2	44.7	49.1	54.7	52.0	56.8	57.2	55.7	58.5
12/25/09	58.8	57.0	57.6	59.9	61.4	45.9	55.2	58.5	49.5	42.5	48.9	57.3	53.7	58.1	59.2	57.4	59.0
12/26/09	60.5	59.0	59.7	54.3	57.1	50.6	53.7	59.6	47.0	44.6	49.3	59.9	56.7	60.8	60.8	59.7	60.7
12/27/09	61.3	59.4	60.3	53.6	57.4	50.3	54.2	61.5	50.4	41.7	52.4	61.4	56.1	62.0	61.2	61.3	62.2
12/28/09	61.4	60.0	60.2	57.1	57.6	55.3	60.0	60.4	56.7	47.0	53.4	59.9	56.7	61.0	61.6	60.2	61.7
12/29/09	63.3	60.5	61.2	60.6	60.3	55.1	59.2	63.7	49.6	50.6	55.1	62.5	58.0	62.9	64.1	62.4	63.7
12/30/09	64.6	61.0	61.9	59.0	56.3	57.4	56.3	63.8	51.3	54.2	54.7	63.2	59.2	63.4	63.3	62.7	64.7
12/31/09	59.6	58.3	58.6	57.9	56.7	57.6	69.4	58.7	51.5	54.8	55.7	58.0	54.8	59.3	59.6	58.7	59.3
AVERAGE	62.1	59.8	60.3	58.7	60.0	56.6	57.6	61.5	54.4	52.0	53.6	60.6	57.1	61.3	62.1	60.8	62.4
NO. DAYS	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
QTR. AVG.	62.0	59.8	60.6	58.8	59.3	57.1	58.7	61.4	54.7	52.1	52.8	60.2	57.0	61.2	62.2	60.7	62.2
NO. DAYS	92	92	92	92	92	92	92	92	92	92	92	92	92	92	92	92	92

TABLE 4. AVERAGE CNEL VALUES

Site No.	1st Quarter 2009	2nd Quarter 2009	3rd Quarter 2009	4th Quarter 2009	4 Quarter Average
1	63.3	63.7	62.8	62.0	63.0
2	60.1	60.6	60.1	59.8	60.2
3	61.1	61.8	61.4	60.6	61.2
4	59.1	58.9	57.6	58.8	58.6
5	59.8	59.2	56.9	59.3	59.0
6	58.3	58.9	56.6	57.1	57.8
7	59.1	59.6	60.3	58.7	59.5
9	61.5	63.3	62.3	61.4	62.2
10	54.5	54.6	53.3	54.7	54.3
11	53.7	53.3	52.4	52.1	52.9
12	54.1	53.7	52.1	52.8	53.2
13	61.3	62.0	60.1	60.2	60.9
14	57.2	57.6	57.0	57.0	57.2
15	61.7	62.2	61.3	61.2	61.6
16	62.1	62.7	62.3	62.2	62.3
17	61.3	62.2	61.5	60.7	61.5
18	62.5	63.3	62.8	62.2	62.7

Table 5. WEEKLY SCHEDULED AIR CARRIER AND AIR TAXI FLIGHTS FOR THE FOURTH QUARTER 2009

SCHEDULE IN EFFECT FROM 10/1/09 to 10/31/09 31 DAYS

AIRCRAFT	AS D8-Q400		AS B7377		AS CRJ7		AS MD80		AS B7378	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	0	0	7	6	19	12	0	0	13	13
EVENING	0	0	0	1	0	7	0	0	0	0
NIGHT	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	7	7	19	19	0	0	13	13

SCHEDULE IN EFFECT FROM 10/1/09 to 10/31/09

	US A319		US A320		US B7372		US B7373		US CRJ	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	0	0	0	0	0	0	0	0	0	0
EVENING	0	0	0	0	0	0	0	6	0	0
NIGHT	0	0	0	0	0	0	6	0	0	0
TOTAL	0	0	0	0	0	0	6	6	0	0

SCHEDULE IN EFFECT FROM 10/1/09 to 10/31/09

	US CRJ7		US CRJ9		AA MD80		WN B7373		WN B7375	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	0	0	20	23	19	19	0	0	0	0
EVENING	0	0	3	0	0	7	0	0	0	0
NIGHT	0	0	0	0	7	0	0	0	0	0
TOTAL	0	0	23	23	26	26	0	0	0	0

SCHEDULE IN EFFECT FROM 10/1/09 to 10/31/09

	WN B7377		UA A319		UA A320		UA B7373		UA B7375	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	300	283	0	0	0	0	0	0	0	0
EVENING	54	71	0	0	0	0	0	0	0	0
NIGHT	0	0	0	0	0	0	0	0	0	0
TOTAL	354	354	0	0	0	0	0	0	0	0

SCHEDULE IN EFFECT FROM 10/1/09 to 10/31/09

	UA B757		UA RJ		UA CRJ7		FE A300		FE A310	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	0	0	36	28	13	7	0	1	0	4
EVENING	0	0	6	14	0	6	5	0	4	0
NIGHT	0	0	0	0	0	0	0	4	0	0
TOTAL	0	0	42	42	13	13	5	5	4	4

SCHEDULE IN EFFECT FROM 10/1/09 to 10/31/09

	UPS A300		UPS B757		DL B752		DL CRJ		DL CRJ7	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	3	4	0	0	0	0	21	14	0	0
EVENING	5	0	0	0	0	0	0	7	0	0
NIGHT	0	4	0	0	0	0	0	0	0	0
TOTAL	8	8	0	0	0	0	21	21	0	0

SCHEDULE IN EFFECT FROM 10/1/09 to 10/31/09

	B6 A320		FW2 A319		AQ B7377				**TOTALS**	
	DEP	ARR	DEP	ARR	DEP	ARR			**DEP**	**ARR**
DAY	20	14	0	0	0	0			**471**	**428**
EVENING	7	13	0	0	0	0			**84**	**132**
NIGHT	0	0	0	0	0	0			**13**	**8**
TOTAL	27	27	0	0	0	0			**568**	**568**

Table 5. **WEEKLY SCHEDULED AIR CARRIER AND AIR TAXI FLIGHTS FOR THE FOURTH QUARTER 2009**

SCHEDULE IN EFFECT FROM 11/1/09 to 12/11/09 41 DAYS

AIRCRAFT	AS D8-Q400		AS B7377		AS CRJ7		AS MD80		AS B7378	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	0	0	7	6	19	12	0	0	13	13
EVENING	0	0	0	1	0	7	0	0	0	0
NIGHT	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	7	7	19	19	0	0	13	13

SCHEDULE IN EFFECT FROM 11/1/09 to 12/11/09

	US A319		US A320		US B7372		US B7373		US CRJ	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	0	0	0	0	0	0	7	13	0	0
EVENING	0	0	0	0	0	0	0	0	0	0
NIGHT	0	0	0	0	0	0	6	0	0	0
TOTAL	0	0	0	0	0	0	13	13	0	0

SCHEDULE IN EFFECT FROM 11/1/09 to 12/11/09

	US CRJ7		US CRJ9		AA MD80		WN B7373		WN B7375	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	0	0	13	19	19	19	0	0	0	0
EVENING	0	0	6	0	0	7	0	0	0	0
NIGHT	0	0	0	0	7	0	0	0	0	0
TOTAL	0	0	19	19	26	26	0	0	0	0

SCHEDULE IN EFFECT FROM 11/1/09 to 12/11/09

	WN B7377		UA A319		UA A320		UA B7373		UA B7375	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	288	272	0	0	0	0	0	0	0	0
EVENING	56	72	0	0	0	0	0	0	0	0
NIGHT	0	0	0	0	0	0	0	0	0	0
TOTAL	344	344	0	0	0	0	0	0	0	0

SCHEDULE IN EFFECT FROM 11/1/09 to 12/11/09

	UA B757		UA RJ		UA CRJ7		FE A300		FE A310	
	DEP	ARR	DEP	ARR	DEP	ARR	0	0	DEP	ARR
DAY	0	0	30	29	16	3	0	1	0	4
EVENING	0	0	6	7	0	13	5	0	4	0
NIGHT	0	0	0	0	0	0	0	4	0	0
TOTAL	0	0	36	36	16	16	5	5	4	4

SCHEDULE IN EFFECT FROM 11/1/09 to 12/11/09

	UPS A300		UPS B757		DL B752		DL CRJ		DL CRJ7	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	3	4	0	0	0	0	21	14	0	0
EVENING	5	0	0	0	0	0	0	7	0	0
NIGHT	0	4	0	0	0	0	0	0	0	0
TOTAL	8	8	0	0	0	0	21	21	0	0

SCHEDULE IN EFFECT FROM 11/1/09 to 12/11/09

	B6 A320		FW2 A319		AQ B7377				**TOTALS**	
	DEP	ARR	DEP	ARR	DEP	ARR			**DEP**	**ARR**
DAY	21	14	0	0	0	0			**457**	**423**
EVENING	7	14	0	0	0	0			**89**	**128**
NIGHT	0	0	0	0	0	0			**13**	**8**
TOTAL	28	28	0	0	0	0			**559**	**559**

Table 5. WEEKLY SCHEDULED AIR CARRIER AND AIR TAXI FLIGHTS FOR THE FOURTH QUARTER 2009

SCHEDULE IN EFFECT FROM 12/12/09 to 12/16/095 DAYS

AIRCRAFT	AS D8-Q400		AS B7377		AS CRJ7		AS MD80		AS B7378	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	0	0	7	6	19	12	0	0	13	13
EVENING	0	0	0	1	0	7	0	0	0	0
NIGHT	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	7	7	19	19	0	0	13	13

SCHEDULE IN EFFECT FROM 12/12/09 to 12/16/09

	US A319		US A320		US B7372		US B7373		US CRJ	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	0	0	0	0	0	0	7	7	0	0
EVENING	0	0	0	0	0	0	0	6	0	0
NIGHT	0	0	0	0	0	0	6	0	0	0
TOTAL	0	0	0	0	0	0	13	13	0	0

SCHEDULE IN EFFECT FROM 12/12/09 to 12/16/09

	US CRJ7		US CRJ9		AA MD80		WN B7373		WN B7375	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	0	0	14	21	19	19	0	0	0	0
EVENING	0	0	7	0	0	7	0	0	0	0
NIGHT	0	0	0	0	7	0	0	0	0	0
TOTAL	0	0	21	21	26	26	0	0	0	0

SCHEDULE IN EFFECT FROM 12/12/09 to 12/16/09

	WN B7377		UA A319		UA A320		UA B7373		UA B7375	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	288	272	0	0	0	0	0	0	0	0
EVENING	56	72	0	0	0	0	0	0	0	0
NIGHT	0	0	0	0	0	0	0	0	0	0
TOTAL	344	344	0	0	0	0	0	0	0	0

SCHEDULE IN EFFECT FROM 12/12/09 to 12/16/09

	UA B757		UA RJ		UA CRJ7		FE A300		FE A310	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	0	0	30	29	16	3	0	1	0	4
EVENING	0	0	6	7	0	13	5	0	4	0
NIGHT	0	0	0	0	0	0	0	4	0	0
TOTAL	0	0	36	36	16	16	5	5	4	4

SCHEDULE IN EFFECT FROM 12/12/09 to 12/16/09

	UPS A300		UPS B757		DL B752		DL CRJ		DL CRJ7	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	3	4	0	0	0	0	21	14	0	0
EVENING	5	0	0	0	0	0	0	7	0	0
NIGHT	0	4	0	0	0	0	0	0	0	0
TOTAL	8	8	0	0	0	0	21	21	0	0

SCHEDULE IN EFFECT FROM 12/12/09 to 12/16/09

	B6 A320		FW2 A319		AQ B7377			
	DEP	ARR	DEP	ARR	DEP	ARR	**TOTALS**	
							DEP	**ARR**
DAY	21	14	0	0	0	0	**458**	**419**
EVENING	7	14	0	0	0	0	**90**	**134**
NIGHT	0	0	0	0	0	0	**13**	**8**
TOTAL	28	28	0	0	0	0	**561**	**561**

Table 5. WEEKLY SCHEDULED AIR CARRIER AND AIR TAXI FLIGHTS FOR THE FOURTH QUARTER 2009

SCHEDULE IN EFFECT FROM 12/17/09 to 12/31/09 15 DAYS

AIRCRAFT	AS D8-Q400		AS B7377		AS CRJ7		AS MD80		AS B7378	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	0	0	7	6	19	12	0	0	13	13
EVENING	0	0	0	1	0	7	0	0	0	0
NIGHT	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	7	7	19	19	0	0	13	13

SCHEDULE IN EFFECT FROM 12/17/09 to 12/31/09

	US A319		US A320		US B7372		US B7373		US CRJ	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	0	0	0	0	0	0	7	7	0	0
EVENING	0	0	0	0	0	0	0	6	0	0
NIGHT	0	0	0	0	0	0	6	0	0	0
TOTAL	0	0	0	0	0	0	13	13	0	0

SCHEDULE IN EFFECT FROM 12/17/09 to 12/31/09

	US CRJ7		US CRJ9		AA MD80		WN B7373		WN B7375	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	0	0	14	21	19	19	0	0	0	0
EVENING	0	0	7	0	0	7	0	0	0	0
NIGHT	0	0	0	0	7	0	0	0	0	0
TOTAL	0	0	21	21	26	26	0	0	0	0

SCHEDULE IN EFFECT FROM 12/17/09 to 12/31/09

	WN B7377		UA A319		UA A320		UA B7373		UA B7375	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	288	272	0	0	0	0	0	0	0	0
EVENING	56	72	0	0	0	0	0	0	0	0
NIGHT	0	0	0	0	0	0	0	0	0	0
TOTAL	344	344	0	0	0	0	0	0	0	0

SCHEDULE IN EFFECT FROM 12/17/09 to 12/31/09

	UA B757		UA RJ		UA CRJ7		FE A300		FE A310	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	0	0	46	33	3	2	0	1	0	4
EVENING	0	0	7	20	0	1	5	0	4	0
NIGHT	0	0	0	0	0	0	0	4	0	0
TOTAL	0	0	53	53	3	3	5	5	4	4

SCHEDULE IN EFFECT FROM 12/17/09 to 12/31/09

	UPS A300		UPS B757		DL B752		DL CRJ		DL CRJ7	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	3	4	0	0	0	0	21	14	0	0
EVENING	5	0	0	0	0	0	0	7	0	0
NIGHT	0	4	0	0	0	0	0	0	0	0
TOTAL	8	8	0	0	0	0	21	21	0	0

SCHEDULE IN EFFECT FROM 12/17/09 to 12/31/09

	B6 A320		FW2 A319		AQ B7377		**TOTALS**	
	DEP	ARR	DEP	ARR	DEP	ARR	**DEP**	**ARR**
DAY	21	14	0	0	0	0	**461**	**422**
EVENING	7	14	0	0	0	0	**91**	**135**
NIGHT	0	0	0	0	0	0	**13**	**8**
TOTAL	28	28	0	0	0	0	**565**	**565**

TABLE 5. (CONTINUED)

FOURTH QUARTER 2009

PERIOD TOTALS FOR
AIR CARRIERS AND AIR TAXIS

AIR CARRIERS

	DEP	ARR
DAY	4723	4572
EVE	1003	1270
NIGHT	171	105
TOTAL	5897	5897

AIR TAXIS

	DEP	ARR
DAY	1355	1055
EVE	149	449
NIGHT	0	0
TOTAL	1504	1504

AIR CARRIERS AND AIR TAXIS

	DEP	ARR
DAY	6078	5577
EVE	1152	1719
NIGHT	171	105
TOTAL	7401	7401

VI. INCOMPATIBLE LAND USE

The contours shown in Figures 1 and 2 were digitized and overlaid on a digital land use map of the area around the Airport. The total areas enclosed by the 65 and 70 dB CNEL contours were 771.5 and 328.0 acres, respectively. The areas of incompatible land uses enclosed by the contours were then computed. The incompatible land use areas were 19.76 acres within the 65 dB contour of which 0.51 acres were also within the 70 dB contour.

It should be noted that the above incompatible land areas do not include the soundproofed schools in the vicinity of the Airport (the Luther Burbank Middle School, St. Patrick and Glenwood Schools). The above incompatible land use areas also do not include those residences to which the Airport has acquired avigation easements. Within the 65 dB contour, the Airport has acquired avigation easements, through its ongoing residential sound insulation program, to 500 parcels of land. Those 500 parcels total 74.02 acres. None of the 500 parcels are also located within the 70 dB contour. Within the 65 dB contour, the Airport has also acquired avigation easements, under the Court of Appeal decision in Baker v. Burbank-Glendale-Pasadena Airport Authority, 220 Cal. App. 3d 1602 (1990), to 56 parcels of land. For 48 of the 56 parcels, the Authority has acquired avigation easements both through Baker and through its ongoing sound insulation program. Those 48 parcels are included in the total number of sound insulation program avigation easements set forth above. The 7 remaining Baker easement parcels total 0.94 acres.

It should be noted that the Airport Authority has made repeated attempts over the past several years to acoustically treat and obtain avigation easements at 137 residential parcels, totaling approximately 19.76 acres of the incompatible land use area within the 65 dB contour. Owners of these parcels have either refused to respond to notices regarding the sound insulation program, have withdrawn from the program, or own properties with major building code deficiencies that prevent them from participating.

The estimated numbers of incompatible residences are 146 within the 65 dB contour, and 3 within the 70 dB contour. The estimated numbers of people residing within the 65 and 70 dB CNEL contours are 394 and 8, respectively.

REFERENCES

1. California Department of Transportation, Division of Aeronautics, "Noise Standards", California Code of Regulations, Title 21, Chapter 2.5, Subchapter 6.

2. L-30488, Department of Transportation, State of California, 27 June 1984.

3. "Quarterly Noise Monitoring at Bob Hope Airport, First Quarter 2009", AAAI Report 1350.

4. "Quarterly Noise Monitoring at Burbank Airport, Second Quarter 2009", AAAI Report 1351.

5. "Quarterly Noise Monitoring at Burbank Airport, Third Quarter 2009", AAAI Report 1352.

APPENDIX A
NOISE MONITOR INSTRUMENTATION

APPENDIX A
NOISE MONITOR INSTRUMENTATION

The permanent noise monitor system, manufactured by Tracor, consists of 17 remote monitoring stations (RMS) connected to a central site by telephone lines. The system block diagram showing the major elements is shown in Figure A-1. The electrical signal generated by the microphone/preamplifier assembly at each site is processed in the RMS electronics. The signal is passed through an A-weighting filter and is then detected and converted to a digital level signal in decibels with a resolution of 0.1 dB.

The digitized sound level is transmitted every half second by telephone line to the central site. The data received by the central site are processed by the computer. According to preset parameters, the noise is separated into two categories--aircraft noise and community noise. Each event attributed to an aircraft is saved in a noise event file. Computations are made of hourly noise level, community noise equivalent level, runway use, and other parameters. A wide variety of data presentations is available by exercising a number of routines provided by Tracor, as well as special-purpose routines that can be generated by the user.

The locations of the remote sites (shown in Figure 3) are listed relative to the runway thresholds in Table A-1.

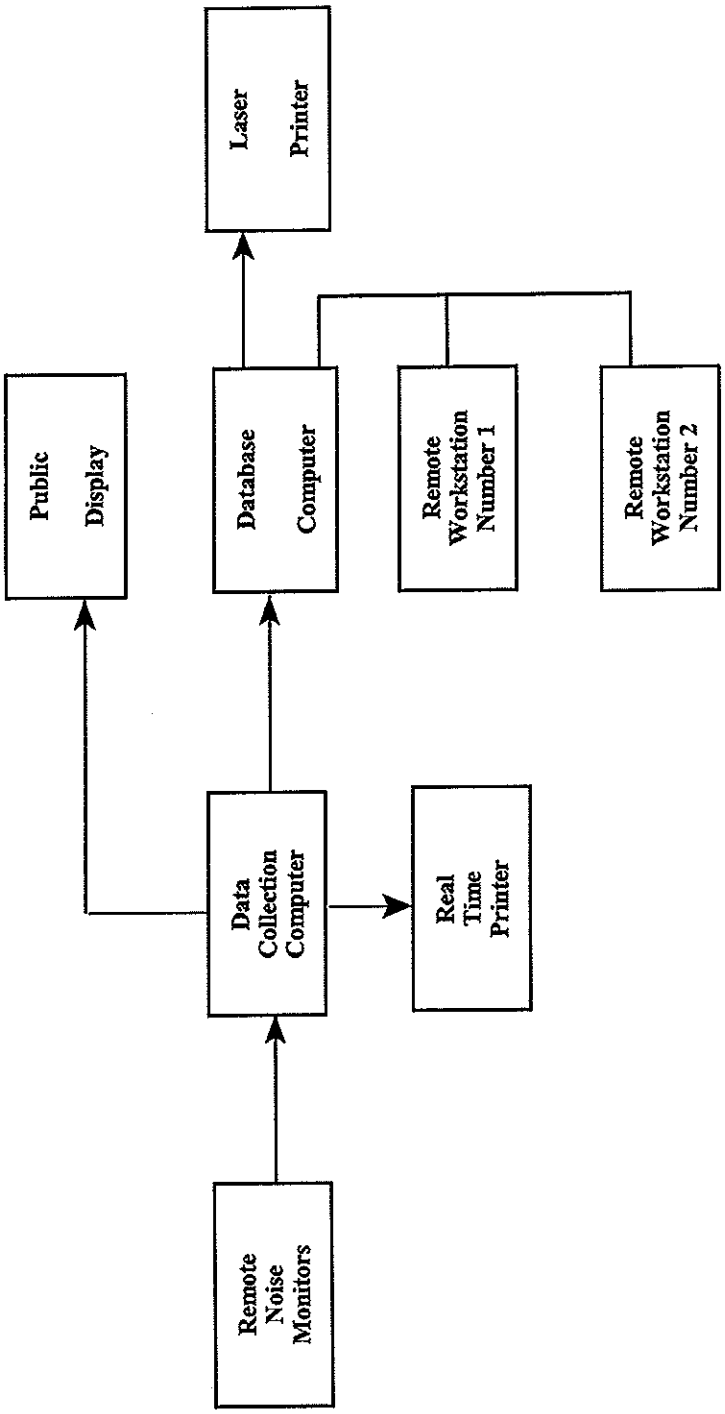

FIGURE A-1. PERMANENT NOISE MONITOR SYSTEM BLOCK DIAGRAM

TABLE A-1
NOISE MONITOR SITE LOCATIONS

Site No.	Distance From N. End of RW 15	Distance From Extended Centerline
1	8590	-1490
2	10830	1590
3	13440	-1090
4	-150	1200
5	-810	1100
6	-3280	-740
7	-4720	-50
12	7520	-3320
13	10660	-3600
14	12780	1160
15	13380	-3920
16	11600	360
17	12900	-3520

Note: Positive distances from the runway threshold are to the south; positive distances from the extended centerline are to the east.

Site No.	Distance From W. End of RW 8	Distance From Extended Centerline
9	-8805	225
10	8180	-880
11	8740	-110
18	-5880	-440

Note: Positive distances from the runway threshold are to the east; positive distances from the extended centerline are to the north.

APPENDIX B
CALIBRATION

APPENDIX B
CALIBRATION

The system was calibrated during setup using a Bruel and Kjaer pistonphone. Acoustic calibrations are being performed approximately every six months. Electrical calibrations are performed automatically shortly after midnight each day. Figure B-1 shows the latest calibration certificate of the pistonphone employed in the acoustic calibrations and Figure B-2 shows a typical electrical calibration.

Odin Metrology, Inc.
Calibration of Brüel & Kjær Instruments

Certificate: **14002-2**
4228 Rev 15 DEC, 2004

Certificate of Calibration
For Brüel & Kjær Pistonphone

MEASUREMENT STANDARDS

This calibration is performed by comparison with Measurement Standard Pistonphones:

Type	4220	Serial Number	1048473
Calibrated by	TS (Brüel & Kjær)	Due Date	17 AUG 2006
Cal Interval	12 Months		

Type	4220	Serial Number	1048795
Calibrated by	TS (Brüel & Kjær)	Due Date	17 AUG 2006
Cal Interval	12 Months		

a) Estimated uncertainty of comparison: ± **0.04**
b) Estimated uncertainty of Calibration Service Standard Pistonphone: ± **0.06** dB
c) Total uncertainty: Sq. Root (a^2+b^2) = **0.07** dB
d) Expanded Uncertainty CF:2=**0.14** dB
(with 95% Confidence Level.)

If the Ambient Pressure P_a deviates from the above stated nominal value, 1013 mbar, a correction ΔSPL should be added to the calibrated Sound Pressure Level.

$\Delta SPL = 20 \times \log_{10}, P_a$ (hPa)/1013

This acoustic calibrator has been calibrated using standards with values traceable to the National Institute of Standards and Technology.

The calibration of this acoustic calibrator was accomplished using a test system that conforms to the requirements of ANSI/NCSL Z540-1(also covering MIL STD 45662A), ISO Guide 25 and the guidelines of ISO 10012-1, ISO 17025, and ISO 9001:2000 Certification NQA No. 11252

Calibration performed by Harold Lynch

Harold Lynch, Service Manager

Calibrator Type	**4228**
Serial Number	**2245246**
Submitted by	**AAA**
	Simi Valley CA 93065
Purchase Order	**Verbal**
Asset Number	**N/A**

This calibrator has been found to perform **within** manufacturer's specifications of the Sound Pressure Level produced in the coupler terminated by a loading volume of 1,333 cm^3 at 1013 mbar, 20°C, and 65% RH to be 124.0 dB ± 0.15dB at a frequency of 251.2 Hz ± 0.1% and a second harmonic distortion of <3%.

This calibration is traceable to:
NIST Test Number 822/270212-04, D1209

Condition of Test:		
Ambient Pressure	992.54	HPa
Temperature	23	°C
Relative Humidity	41	%
Date of Calibration	08 MAR 2006	
Re-calibration due on	08 MAR 2007	

PERFORMANCE AS RECEIVED:		
SPL	124.07	dB re 20 µPa
Frequency	251.15	Hz
Distortion	0.6	%
HF Noise	-55	dB re 124 dB
Battery Voltage	7.7	VOLT

Was repair or adjustment performed?	No!
Were parts replaced?	No!
Were batteries replaced?	Yes!

FINAL PERFORMANCE:		
SPL	124.07	dB re 20 µPa
Frequency	251.15	Hz
Distortion	0.6	%
HF Noise	-55	dB re 124 dB

Note: This pistonphone was **within** manufacturer's specifications as received.

ODIN METROLOGY, INC.
CALIBRATION OF BRÜEL & KJÆR INSTRUMENTS
3533 OLD CONEJO ROAD, SUITE 125
THOUSAND OAKS, CA 91320
PHONE: (805) 375-0830; FAX: (805) 375-0405

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* Calibration Report *
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Calibration RMS: 1 Passed Peak:109.9 dB @ 01/25/2006 0:06
Calibration RMS: 2 Passed Peak:109.8 dB @ 01/25/2006 0:06
Calibration RMS: 3 Passed Peak:109.7 dB @ 01/25/2006 0:06
Calibration RMS: 4 Passed Peak:109.7 dB @ 01/25/2006 0:06
Calibration RMS: 5 Passed Peak:109.8 dB @ 01/25/2006 0:06
Calibration RMS: 6 Passed Peak:109.9 dB @ 01/25/2006 0:06
Calibration RMS: 7 Passed Peak:109.9 dB @ 01/25/2006 0:06
Calibration RMS: 9 Passed Peak:109.8 dB @ 01/25/2006 0:06
Calibration RMS:10 Passed Peak:109.8 dB @ 01/25/2006 0:06
Calibration RMS:11 Passed Peak:109.9 dB @ 01/25/2006 0:06
Calibration RMS:12 Passed Peak:109.9 dB @ 01/25/2006 0:06
Calibration RMS:13 Passed Peak:110.0 dB @ 01/25/2006 0:06
Calibration RMS:14 Passed Peak:109.9 dB @ 01/25/2006 0:06
Calibration RMS:15 Passed Peak:110.0 dB @ 01/25/2006 0:06
Calibration RMS:16 Passed Peak:109.7 dB @ 01/25/2006 0:06
Calibration RMS:17 Passed Peak:109.7 dB @ 01/25/2006 0:06
Calibration RMS:18 Passed Peak:109.8 dB @ 01/25/2006 0:06

Figure B-2. Typical Daily Electrical Calibration